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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,032	04/05/2000	SAMUEL C. RAMEY	5588-66325	1710
32692	7590	10/07/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			WALSH, DANIEL I	
PO BOX 33427			ART UNIT	
ST. PAUL, MN 55133-3427			PAPER NUMBER	
			2876	

DATE MAILED: 10/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/529,032

Applicant(s)

RAMEY ET AL.

Examiner

Daniel I Walsh

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 30-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-14 and 17-29 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7-04</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Receipt is acknowledged of the Amendment received on 19 July 2004.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-5, 9, 12-14, 18-21, 24, 25, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over McHugh (US 5,286,207) in view of Lewis (US 5,492,481) and Yamamoto et al. (WO009710691A1).

Re claims 1 and 24, McHugh teaches a connector with a body having first and second spaced apart side arms formed integrally with the body and configured to receive the card there between through FIG. 1. McHugh teaches a side arm has a longitudinally extending member

through the housing 12 as shown in FIG. 1, which includes a tunnel type member for accommodating actuator button 48. McHugh teaches an actuator button 48/52/53/54 having a longitudinally extending member (see FIG. 1 and FIG. 2) to contact with the first member (tunnel portion of housing 12) to allow the button to move longitudinally relative to the body. McHugh teaches an ejector mechanism coupled to the body and the button, the ejector mechanism being configured to eject the card from the body upon longitudinal movement of the button relative the body, through sliding pate 72 and lever 62 for card ejection/extraction. These parts are understood to comprise a mechanism to facilitate ejection, and hence are understood to form an ejection mechanism, or an arrangement of parts for ejection purposes. Though McHugh teaches a tunnel member for accommodating the actuator button, not a dovetail member, and though McHugh teaches an actuator button that connects with the tunnel member as opposed to an actuator button with a dovetail member to engage the first dovetail member, such modification would have been obvious to an artisan of ordinary skill in the art at the time the invention was made. Dovetail members are well known and conventional for connecting members together. Further, it appears that the claimed invention would perform equally well with the dovetail accepting and engaging members as with the tunnel and corresponding member. Therefore, it would have been an obvious matter of design variation since the tunnel member taught by McHugh is functionally equivalent to the dovetail members since in both cases, fasteners are not required to couple the body to the button, and both can be used to accommodate sliding members. Furthermore, the use of dovetails are well known and conventional in the art, whether for interlocking means or for sliding means (see US 5,289,001, 6,356,457, 5,286,207, 4,091,440). Therefore, simply adapting the teaching of McHugh and

replacing its tunnel and engaging member with well known female/male dovetail members would have been well known. Further, the examiner notes that dovetail members can be costly to implement (see US 4,466,049), which teaches away from dovetail members providing an advantage over the prior art of McHugh.

Re claim 2, McHugh teaches that the ejector includes a pivot configured to engage the body so that movement of the button relative the body causes the ejector mechanism to pivot about the pivot to eject the card through “To have the lever 62 properly pivot relative to the housing 12 for effectively actuating the sliding plate 86, a rivet (not shown) extends through the rivet hole 94 of the fixed plate 86 and the rivet hole 69 of the lever 62 and fastens the fixed plate 86 and the lever 62 together with permission of pivotal movement of the lever 62 thereabout. A properly sized window 98 is positioned in the middle of the main plane 92 of the fixed plate 86 not only for observing the operative engagement of the actuating opening 70 of the lever 62 and the projecting wall 74 of the sliding plate 72, but also for restraint of the lengthwise movement of the projecting wall 74 and/or the sliding plate 72 because the projecting wall 74 extends almost flush with the top surface of the main plane 92 of the fixed plate 86 in the window 98” (col 6, lines 47+) and “The memory card connector as described in claim 9, wherein a fixed plate is positioned on the top of the lever and pivotally connected to the lever through a rivet so that the lever and the sliding plate are sandwiched between the fixed plate and the top surface of the housing and the lever can swingably actuate the sliding to move in the front-to-back direction” (see claim 10). It is understood that the pivoting of the ejector mechanism causes the card to be ejected. Further, though McHugh is silent to a pivot cam, the pivoting means as taught by

McHugh are understood to meet the functional limitations of the pivot cam as taught by the current invention, as pivoting and cams are well known and conventional in the art.

Re claim 3, it is understood that the button includes a notch toward the rear of 48, and that 62, and 72 have end flanges/tips. Specifically, 62 is interpreted to include a flange (tip) 64 to engage the notch of the button for engagement (see FIG. 5A-8).

Re claim 4, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, this limitation is not given patentable weight. Further, McHugh teaches that mechanism 62 is formed of a flat metal plate. Though McHugh is silent to how the flat metal plate is formed, it is well known and obvious that metal components can be stamped from sheet metal, especially when the component is of a unitary construction, as in the case of lever 62. For example, Broschard, III et al. teaches the formation of unitary components that are stamped from sheet metal (see col 3, lines 19+). Further, it is well known and conventional in sheet metal manipulation that machine tools cut or stamp the parts and that they can be bent and shaped accordingly, as is the case with muffler assemblies, clips, etc. (see Ramey et al. US 6,091,605 and White 5,678,948). Therefore simply applying a well-known metal manipulation means to produce a metal part, would have been well known and obvious. Further, the examiner notes that the lever 62 of McHugh is very similar in shape to ejector mechanism 32.

Re claim 5, these limitations have been discussed above. First flange 64 engages the notch portion of the button to couple the ejector mechanism to the button. The second flange on 72 extends through the opening (width-wise) formed in the body adjacent the arm towards the arm. The pivot cam means has been discussed above where a rivet type device allows for pivoting to eject the card upon actuation of the button.

Re claims 9 and 25, McHugh teaches a button assembly including a first member 48 coupled to the side arm of the body through housing 50 and a pressing part 52 configured to be engage by an operator to move the first member and the pressing member relative to the body. Further, it has been taught above that notch 54 or the button/first member is coupled to engage with 64 to eject the card.

Re claims 12-13 and 28-29, McHugh teaches the pressing part inserted into the first member, but doesn't teach the first member has upper and lower domed surfaces to enter apertures in the spring arm upon insertions. However, McHugh teaches that the pressing part is inserted into the first member, and that the first member has a slot and ramp for installation of the pressing member (see FIG. 5B). However, having domed surfaces and apertures for slot and snap connections are well known and obvious in the art (see Cyr et al. US 6,510,578). Therefore, simply using a well known connection process (domed portions with apertures) to attach the pressing member to the first member, would have been obvious to an artisan of ordinary skill in the art as a matter of design variation, as an alternative way to facilitate connection between parts. Further, though McHugh teaches the ramp and slot in the first member as opposed to the pressing member, at the time the invention was made, it would have been an obvious matter of design variation to do have the ramp in the pressing member as opposed to the first member, since doing so does not change the functionality of the device, and does not solve a particular problem or serve a particular functional purpose that cannot be met by the prior art teaching. Simply integrating into one part, that which has been formerly formed of multiple parts involves only routine skill in the art.

Re claim 14, the teachings have been discussed above, re claims 1-5.

Re claim 18, McHugh teaches downward pushing walls/tab 78 to eject the card.

Re claim 19, portion 74 of the ejector mechanism 72 has an upturned edge. Further, the Examiner notes that the claim does not recite any functional purpose for such an upturned edge.

Re claim 20, the ejector mechanism 62 does not have a ramp surface, though it has an inclined surface adjacent a lower portion 64, both being adjacent the first flange. Though no ramp portion is taught, an inclined portion is taught and a ramp portion in the pressing member (see FIG. 5B) is also taught. Therefore, it would have been an obvious matter of design variation to substituted the inclined portion 62 for a ramp, as a matter of design variation, since the applicant does not cite a functional recitation for the ramp in the claim and its dependents, and therefore it understood that a ramp or inclined portion would perform equally, as no functional recitation is cited.

Re claim 21, shoulder 60 of the button/pressing member retains the lever and is seen as a stop adjacent the inclined portion 62. Though shoulder 60 is not part of the ejecting member itself, it would have been an obvious matter of design variation to make it part of/integral the ejecting member as opposed to the pushing member/button since doing so would not change the functionality and it would perform just as well, and it has been held that integrating what has been normally formed of separate pieces is within the ordinary skill in the art, since stopping is accomplished in both instances.

McHugh fails to teach the use of a monolithic ejection mechanism. Though McHugh teaches an ejection mechanism that is made of several components, it would have been obvious at the time the invention was made, to make an integral/monolithic mechanism, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put



together involves only routine skill in the art. Howard v. Detroit Stove Works, 150 U.S. 164 (1893).

Lewis teaches a monolithic ejector mechanism 206 that is coupled to the body/frame and push arm/button (FIG. 11A). The mechanism slides against the body as it is rotated on and around aperture 244 of the frame/body, and therefore is in a necessarily sliding/pressing relationship with the frame/body. Re claim 2, Lewis also teaches the ejector includes a pivot cam to slide against the body so that movement of the button relative to the body causes the mechanism to pivot about the pivot cam to eject the card (FIG. 11A) where the pivot 246 are interpreted as the pivot cam that slides against the body. Re claims 6 and 15, Lewis teaches the body includes a curved portion to receive and slide the pivot cam, as discussed above through hole 244. Re claim 16, the pivot cam has a curved outer surface that has roughly the same radius as the outer surface as the body it engages (FIG. 11A).

At the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to combine the teachings of McHugh with those of Lewis.

One would have been motivated to do this to create an integral ejection mechanism, as is well known and conventional in the art, and has the predicted results of reducing the number of independent parts/cost/assembly, while facilitating ejection of the card under various circumstances and orientations (left/right).

McHugh/Lewis are silent to the ejector mechanism having a protrusion that slides against the wall of the body, including a pivot cam.

Yamamota et al. teaches such a one-piece ejector mechanism 68 with a protrusion (FIG. 3) that slides against the wall (interpreted as a cam).

At the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to combine the teachings of McHugh/Lewis with those of Yamamota.

One would have been motivated to do this to have a protrusion to assist in rotational/pivotal movement (fulcrum) to eject the card.

3. Claims 8, 17, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over McHugh/Lewis/Yamamota et al., further in view of Broschard, III et al. (US 5,389,001).

The teachings of McHugh/Lewis/Yamamoto et al. have been discussed above.

McHugh/Lewis/Yamamoto et al. are silent to a lip and downwardly extending flange portion.

Re claim 17, Broschard, III et al. teaches lip 86 that is adjacent the cam and over the ejector. Though its not part of the body (integral) it is used to sandwich 62 and 72 and ensure correct motion, and therefore is functionally equivalent to the claimed invention. Therefore, it would have been an obvious matter of design variation to use an integral lip/body design over the prior art, since simply integrating into one unit that which has been formed in two pieces formerly, only involves routine skill in the art. Modification is further obviated as the lip of the prior art is used to sandwich/ensure correct motion, as in the current invention. Further, lips/covers are well known in the art for ejector mechanisms, to protect the components, for example.

Re claim 8, 22, and 23, McHugh teaches that the first flange includes a downwardly extending portion and an outwardly extending portion (see FIG. 6). However, McHugh teaches that the outwardly extending portion is located in the notch, and therefore, the downwardly extending portion is not located below the button. Via FIG. 14A, it is generally understood that

the opening is formed via an elongated bar, as a bar lets the flange pass through it into bar 48. Therefore, the opening adjacent the second arm is the opening formed by the elongated bar and first and second spaced apart arms, i.e. the opening for the card to be inserted into, and therefore the opening is seen as under/below the elongated bar 48. McHugh fails to teach that the second flange includes a downwardly extending portion and an outwardly extending portion under the bar. However, at the time the invention was made, it would have been an obvious matter of design variation to have such a flange arrangement whereby a downwardly extending portion is below the button and a outwardly extending portion is under the bar, as opposed to the teaching of McHugh, since it appears that the invention would perform equally well with the flange arrangement of McHugh, since McHugh's flange arrangement is for support and permitting rotational movement, like the present invention. Further, McHugh even teaches a downwardly extending portion 78. Therefore the use of such a portion is well known in the prior art, and is situated below bar 48. Further, simply changing the flange location to above/below a button does not result in an effective functional change, since both the prior art and the current invention allow for coupling of the ejector mechanism to the housing, and provide a predictable and reliable way for ejection. Flanges are well known, and simply modifying the arrangement of a well known flange without providing a result effective functional difference, would have been obvious, as it is well known in the art that there are multiple ways to secure pieces of a device together (flanges, screws, openings, tracks, guides, etc.) Further, support for modifying a flange can be seen through (Okubo et al. US 5,151,989) where the first lever end 122 is bent downwardly to lie against the lower surface of the eject button.

At the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to combine the teachings of McHugh/Lewis/Yamamoto et al. with those of Broschard, III in order to have a means to protect/cover components and to form the device using methods and materials which are well known and conventional in the art, and therefore an obvious expedient.

4. Claims 10-11, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over McHugh/Lewis/Yamamoto et al., further in view of Okubo et al. (US 5,151,989).

The teachings of McHugh/Lewis/Yamamoto et al. have been discussed above.

McHugh/Lewis/Yamamoto et al. fail to teach a two-piece button assembly where a first member is secured to a pressing part by a domed surface/detent on the first member that is configured to enter an aperture in the pressing part.

Two-piece actuators/buttons are well known and conventional in the art for alternative constructions for button devices. For example, Komatsu teaches a two piece button assembly (see FIG. 2) where an indentation formed next to 62 is used to secure the first member 6 to the pressing member 81 of the button 8, so that adjust can be made for an appropriate tensile force for ejection, thus being more customizable.

Okubo et al. teaches a two-piece button assembly through FIG. 2. Okubo et al. teaches a shaft 9 that goes through a cutout 22 of the eject button which secures the first member to the pressing part upon insertion of the shaft through the cutout (see FIG. 2 and FIG. 3). An aperture is formed on the pressing part since the shaft 9 goes through both the lever 8 and ejector member. Okubo therefore fails to teach that the shaft is integral with the first member (i.e. that the first member has a domed shape detent).

However, at the time the invention was made, it would have been an obvious matter of design variation to make the shaft integral with the member (combine the teachings of McHugh/Lewis/Yamamoto et al. with those of Okubo), since it appears the apparatus would perform equally well, and the integration into a dome shaped detent does not provide a particular functional purpose that is not met by the prior art. One would have been motivated to have such an integral assembly, as opposed to a separate shaft and hole, to provide a rotational relationship that is well known in the art for facilitating predictable and reliable movement around a shaft.

#### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1 and 14 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Allowable Subject Matter***

6. Claims 6, 7, 15, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:  
The prior art of record is silent to the body having a curved portion to receive and slide against the pivot cam.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Akasaka et al. (US 2004/0018761), Hirata et al. (US 2004/0067668), Wu (US 6,145,747), Spickler et al. (US 5,967,810), Hsia et al. (US 5,993,227), Nagata (US 5,374,198), Yamamoto et al. (US 5,967,811), Uchikawa (US 6,609,918), Kaufman et al. (US 5,470,241), Kuo (US 6,482,030), Tung (US 6,102,719), Abe (US 5,533,906), Hu et al. (US 2003/0114031), David et al. (US 5,597,316), Bettini (WO 9530205), and Fitting (WO 0687036).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Walsh whose telephone number is (571) 272-2409 (as of January 15, 2004). The examiner can normally be reached between the hours of 7:30am to 4:00pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone numbers for this Group is (703) 872-9306, (703) 308-7724, or (703) 308-7382.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [daniel.walsh@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set for the in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



DW  
9-22-04



KARL D. FRECH  
PRIMARY EXAMINER